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09/485559

FL1049USPCT

Amendment

3-Mo Extension of Time

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Rev. 10/93

APR 08 2005

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

SARA W. BOEHMER ET. AL.

CASE NO.: FL1049USPCT

SERIAL NO.: 09/485559

GROUP ART UNIT: 1764

FILED: FEBRUARY 11, 2000

EXAMINER: V. MANOHARAN

FOR: PURIFICATION OF DIFLUOROMETHANE BY EXTRACTIVE DISTILLATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

This is submitted in response to the Office Action dated 10/13/2004. Applicants respectfully request reconsideration and submit the following in support thereof.

Sir:

The Examiner stated: "The WO '936 discloses a process for the separation of difluoromethane (HFC-32) from pentafluoroethane (HFC-125), using methylene chloride as the extractive distillation agent." The Examiner further indicated that methylene chloride corresponds to chlorocarbon extractive agents in claim 1 represented by the formula $C_3H_{2s+2}Cl_t$, wherein s is 1 or 2 and t is from 2 to 4. However, claim 1 also states: "...with the proviso that when the halocarbon is pentafluoroethane (HFC-125), the chlorocarbon extractive agent may not be methylene chloride." Therefore, claims in this application have excluded the subject matter of WO '936.

The Examiner has rejected Claims 1-11 under 35 U.S.C. 103(a) as being obvious over WO 97/03936 and EP 0626362. According to the Examiner, "To combine the above references such that the hydrocarbons of EP '362 is used with or without the methyl chloride would have been obvious to one of ordinary skill in the art since reasonable expectation of success is achieve[d] utilizing any of the solvents or agents disclose in both references for the separation of HFC-32 from HFC-125." Applicants respectfully disagree.

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The WO '936 discloses the separation of HFC-32 from HFC-125, and the EP '362 discloses the separation of HFC-125 from CFC-115. In other words, they describe different processes. The Office Action assumes without establishing why a skilled person in this art would conclude that the separation of HFC-32 from HFC-125 is analogous to the separation of HFC-125 from CFC-115. Actually, a skilled person in this art knows that the differing functional groups of these compounds causes subtle changes in chemical behavior, i.e., changing either the product or the impurity being separating prevents any reasonable analogy. Such changes preclude any reasonable extrapolation from a HFC-125/CFC-115 system to a HFC-32/HFC-125 systems. For this reason, WO '936 and EP '362 are improperly combined. For the same reason, the teachings of WO '936 and EP '362 are not sufficient for one of ordinary skill in this field to realize the present invention without lengthy research and independent conception.

The Examiner has also rejected Claims 12 under 35 U.S.C. 103(a) as being obvious over JP 07291878, WO 97/03936 and EP 0626362. According to the Examiner, "[t]o substitute and/or utilize the agents used in the process of EP '362 and WO '936 in the process ... would have been obvious to one of ordinary skill in the art especially since all the references are directed to the same processing environment ...". Applicants respectfully disagree. For the same reasons described above, extractive agents used in the systems in EP '362 can not be extrapolated to the systems in JP '878 and WO '936. They can not be extrapolated to the system in claim 12 either. Therefore, the combination of JP '878, EP '362 and WO '936 are not proper.

In view of the foregoing, allowance of the above-referenced application is respectfully requested.

Respectfully submitted,



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Dated: April 8, 2005